

ABSTRACT

APPARATUS AND METHOD FOR SEPARATING/MIXING PARTICLES/FLUIDS

An apparatus and method for separating a particle stream into particle groups, comprising a dilution treatment chamber defining an upstanding channel to receive a particle stream, such that the particle stream falls toward a first-particle-group outlet. A transfer casing is adjacent to the dilution treatment chamber and defines a transfer chamber to receive a second particle group. Second-particle-group outlets are laterally positioned with respect to the channel and allow fluid communication therebetween. A distributor in the channel is provided to break down the particle stream and to distribute the particle stream over a surface area of the channel. Fluid flow apertures create a fluid flow between the transfer chamber and the channel so as to entrain a second particle group to the transfer chamber with a first particle group remaining in the channel for exiting through the first-particle-group outlet. The apparatus and method is also used to mix/treat particle streams/fluids.